

# REPORT ON MACHINERY.

No. 19768

No. in Survey held at Newcastle  
Reg. Book.

Date, first Survey 8<sup>th</sup> June 185 Last Survey 9<sup>th</sup> Octr 1886

(Number of Visits 30) Tons 1654  
1044

on the S S Ardgay

Master A. Cook Built at Newcastle By whom built W. Dobson & Co When built 1856

Engines made at Newcastle By whom made Black Hawthorn & Co when made 1856

Boilers made at Do By whom made Do when made 1856

Registered Horse Power (140) 160 Owners Adam Bedd Port belonging to Aberdeen

## ENGINES, &c.—

Description of Engines Triple expansion condensing middle 21"  
Diameter of Cylinders 21.33.55 Length of Stroke 36 No. of Rev. per minute 71 Point of Cut off, High Pressure 22" Low Pressure 17 1/2"  
Diameter of Screw shaft 10 3/4 Diam. of Tunnel shaft 10 1/4 Diam. of Crank shaft journals 10 3/4 Diam. of Crank pin 10 3/4 size of Crank webs 20 x 9  
Diameter of screw 13-5 Pitch of screw 15-0 No. of blades 4 state whether moveable no total surface 63 ft  
No. of Feed pumps 2 diameter of ditto 2 3/4 Stroke 18 Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 diameter of ditto 3 3/4 Stroke 18 Can one be overhauled while the other is at work yes  
Where do they pump from 6 Bilge suction ES, 1 suction FH, 1 suction TW, all tanks & sea.  
No. of Donkey Engines Two Size of Pumps 8 x 10 & 3 x 6 Where do they pump from 3 tank suction FH, 2 suction Starboard off-tank, 2 suction port off-tank, 1 suction off-off-tank, Sea & all bilges  
Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes  
No. of bilge injections 1 and sizes 4 1/2 Are they connected to condenser, or to circulating pump in  
How are the pumps worked Lever over condenser  
Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line above  
Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate yes  
What pipes are carried through the bunkers none How are they protected —  
Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes  
Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock new  
Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Top platform

## BOILERS, &c.—

Number of Boilers Two Description Cylindrical Whether Steel or Iron Steel  
Working Pressure 150 Tested by hydraulic pressure to 300 Date of test 26<sup>th</sup> August 1886  
Description of superheating apparatus or steam chest none  
Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately —  
No. of square feet of fire grate surface in each boiler 34 Description of safety valves Spring No. to each boiler 2  
Area of each valve 40" Are they fitted with easing gear yes No. of safety valves to superheater — area of each valve —  
Are they fitted with easing gear — Smallest distance between boilers and bunkers or woodwork 14 Diameter of boilers 12-3  
Length of boilers 10-6 description of riveting of shell long. seams Double Rivet circum. seams 3 3/8 Thickness of shell plates 1 1/16  
Diameter of rivet holes 1 1/8 whether punched or drilled Drill pitch of rivets 6 3/4 Lap of plating 16 1/2  
Per centage of strength of longitudinal joint 82 1/2 working pressure of shell by rules 155 size of manholes in shell 16 x 12  
Size of compensating rings 6 x 1 1/16 Corrugated Furnaces in each boiler 2  
Outside diameter 46 length, top 7-0 bottom 9-9 thickness of plates 9 1/16 description of joint Welded if rings are fitted both  
Greatest length between rings 7-0 working pressure of furnace by the rules 159 combustion chamber plating, thickness, sides 9 1/16 back 9 1/16 top 9 1/16  
Pitch of stays to ditto, sides 8" back 8 top 13 1/16 If stays are fitted with nuts or riveted heads Nuts working pressure of plating by rules 157 Diameter of stays at smallest part 1 1/16 working pressure of ditto by rules 150 end plates in steam space, thickness 7/8  
Pitch of stays to ditto 14 3/8 how stays are secured Nuts working pressure by rules 150 diameter of stays at smallest part 2 3/8 working pressure by rules 160 Front plates at bottom, thickness 3 3/4 Back plates, thickness 3 3/4  
Greatest pitch of stays — working pressure by rules — Diameter of tubes 3 3/4 pitch of tubes 5" thickness of tube plates, front 13 1/16" back 18 1/16" how stayed Tubes pitch of stays 10" width of water spaces 6"  
Diameter of Superheater or Steam chest none length — thickness of plates — description of longitudinal joint — diam. of rivet holes —  
Pitch of rivets — working pressure of shell by rules — diameter of flue — thickness of plates — If stiffened with rings —  
Distance between rings — working pressure by rules — end plates of superheater, or steam chest; thickness — how stayed —  
Superheater or steam chest; how connected to boiler —

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Report p. 12/10/86 sent to Lm. 27/10/86



DONKEY BOILER— Description *Blaker's patent (Steel)*  
Made at *Manchester* by whom made *Mr James Blaker* when made *1-9-86* where fixed *Stokeholes*  
Working pressure *90* tested by hydraulic pressure to *180* No. of Certificate *579* fire grate area *10* ~~10~~ description of safety  
valves *3 springs* No. of safety valves *one* area of each *9.6* if fitted with easing gear *yes* if steam from main boilers can  
enter the donkey boiler *no* diameter of donkey boiler *5-8* length *12-6* description of riveting *S L*  
Thickness of shell plates *7/16* diameter of rivet holes *3/4* whether punched or drilled *drill* pitch of rivets *2 1/2* lap of plating *4 1/4*  
per centage of strength of joint *—* thickness of crown plates *7/16* stayed by *Hemispherical*  
Diameter of furnace, top *2-1* bottom *3-10* length of furnace *3-0* thickness of plates *1/2* description of joint *S L*  
Thickness of <sup>*can chamber*</sup> furnace crown plates *7/16* stayed by *1 1/4 square stay 8" x 8"* working pressure of shell by rules *96 lb*  
Working pressure of furnace by rules *90* diameter of uptake *18"* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *As per Society's requirements*

The foregoing is a correct description,  
Manufacturer.

*Black Hawthorn & Co*

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The machinery of this vessel has been surveyed during construction. The materials and workmanship are sound and satisfactory and eligible in my opinion to have the notation + R M C 10-L-86 in the Society Register Book.*

*It is submitted that this vessel is eligible to have the notation + R M C 10-L-86 recorded.*

*29/10/86*

The amount of Entry Fee .. £ 2 : - : - received by me, }  
Special .. .. £ 21 : - : - }  
Donkey Boiler Fee .. .. £ - : - : - }  
Certificate (if required) .. .. £ - : - : - } *27<sup>th</sup> Oct 1886*  
To be sent as per margin.

(Travelling Expenses, if any, £ - - -)

Committee's Minute

FRIDAY 29 OCT 1886

*L. M. C.*

*John Brooker*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.